

**Testimony of**  
**Dr. Donald Wayne Reeves**  
**Supervisory Research Agronomist**  
**J. Phil Campbell, Senior, Natural Resource Conservation Center**  
**U.S. Department of Agriculture, Agricultural Research Service**  
**for the**  
**U.S. House of Representatives**  
**Committee on Agriculture**  
**Subcommittee on Conservation, Credit, Rural Development, and Research**  
  
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Mr. Chairman, and Members of the Subcommittee, thank you for inviting me here today to represent the J. Phil Campbell, Senior, Natural Resource Conservation Center (JPCNRCC). The Center is one of the more than 100 research locations in the Agricultural Research Service (ARS), the primary intramural research agency in the U.S. Department of Agriculture. Since its creation in 1937, JPCNRCC has recognized the critical role agricultural research has played in solving natural resource problems of broad significance to the public. Over the past 66 years JPCNRCC scientists have researched soil-plant-animal-atmosphere systems to provide invaluable information for designing practical approaches to land management for optimum use and conservation of natural resources. Our research ranges in scope from improved understanding of biological, chemical and physical processes that limit agroecosystem productivity and sustainability, to interactions of ecosystems within landscapes.

The goal at JPCNRCC is to develop and transfer successful agricultural systems to land owners and managers to protect and sustain the natural resource base, build accord with non-agricultural sectors, and support healthy rural economies. We carry out this goal with a dedicated and highly trained staff. We have 10 research scientists and fifteen technical and administrative support people. We also employ University of Georgia support personnel and students to help conduct research. Our close proximity to and historical relationship with the University of Georgia College of Agriculture and

Environmental Sciences enhances and strengthens complementary programs for developing efficient and economical farming practices.

Mr. Chairman, your letter inviting me to testify at this hearing said the subcommittee was interested in learning about our funding stream, how we use the funds, and what changes were needed to make the research more effective. We are very pleased that the President's proposed budget for ARS has an increase of approximately \$5.2 million for the Climate Change Research Initiative (CCRI). Under this initiative, ARS research will identify and develop cost-effective strategies for increasing carbon storage in soils, reducing green house gas emission from agriculture, and generating renewable energy from animal waste. A key part of this approach is accurate and rapid measurement of green house gas emissions from agriculture systems. If adopted by Congress, JPCNRCC is expected to receive \$350,000 of the CCRI funding for our research program on measuring and managing methane emissions from livestock production systems. Currently, the FY 2004 federal base funding (net to the location) for the Center is \$2,809,489. The Center will also receive approximately \$422,000 in temporary funds generated by grants and cattle sales during this fiscal year. These funds are critical to meeting the mission of the Center. Current discretionary funding used by research scientists is for supplies, equipment, travel, laboratory analyses, and extra labor.

Research at JPCNRCC is designed to enhance soil-water-nutrient processes in Southern Piedmont pasture and cropping systems; developing sustainable crop and animal production systems suitable for the Southeast; preventing pathogen transport to Southern Piedmont landscapes from poultry and other animal production systems; and measure and mitigate air emissions from animal production systems. To ensure that our programs are relevant to priority needs, they are based on recommendations from many sources; among them, the Administration, the Congress, commodity organizations, customer and stakeholder groups, collaborators and cooperators, advisory committees, and action and regulatory agencies in and outside the Department. Our research is closely coordinated in Washington, D.C. by the ARS Administrator and National Program Staff to avoid duplication, and to help maximize and transfer research benefits.

**Some of our recent accomplishments include:**

- Determining that the source of most microorganisms used to indicate pathogen contamination in the Upper Oconee river watershed was associated with wildlife and not agriculture.
  - Determining that farm ponds are an effective environmental management practice to clean manure-associated bacteria from water.
  - Identifying the best tillage practice to maximize net returns, reduce erosion, and improve soil quality for cotton producers in the Southern Piedmont.
  - Discovering that well-fertilized endophyte-infected fescue pastures have the potential to reduce carbon dioxide in the atmosphere by storing more carbon in soil.
  - Identifying that haying of bermudagrass, even with broiler litter fertilization, is an effective management tool to reduce phosphorus contamination of surface waters; excess phosphorus causes algae growth and reduces oxygen available to fish and other aquatic life.
  - Using intensive data collected since 1940 to validate the critical need to protect Southern Piedmont farmlands by maintaining vegetative cover all year around.
  - Working with US-EPA to discover that iron in clay soils, common in the Southeast, helps reduce nitrate contamination of ground water.
- ?      Developing methods to accurately measure trace gas emissions from confined animal feeding operations (CAFOs) and identifying management practices to mitigate these emissions.

- Determining that application of poultry litter to cropping systems does not pose a risk of contaminating surface waters with two sex hormones, estradiol and testosterone, of recent concern to the public.
- Working with other ARS units, determining that cutting alfalfa in the afternoon provides higher quality forage preferred by animals than when cut in the morning.

As important as these strides have been in providing conservation practices for crop and animal production systems, the increasing urbanization of the Southeast continues to make additional research solutions vital and urgent. **The research challenges and opportunities that we see for the near and long-term future include :**

- Developing improved guidelines for utilization of land application of animal manures.
- Developing improved management practices to store carbon and mitigate trace gas impacts from agricultural activities.
- ? Developing and coordinating a national system for bacterial source tracking, based on DNA fingerprinting, of fecal bacteria in contaminated water.
- Developing organic production methods for grain to be used in the rapidly growing market for certified organic poultry production.
- Developing integrated crop-livestock systems that are profitable, environmentally friendly, and efficient for major physiographic regions in the Southeast.

Mr. Chairman, before concluding my testimony, I would like to say that this year marks the 50<sup>th</sup> Anniversary of the Agricultural Research Service. We are taking this year to

reflect on the Agency's accomplishments over the past five decades and the promise of ARS to continue outstanding research in the next 50 years and beyond. The foundation for past and future successes is ARS' dedication to finding better ways to produce food and fiber while preserving our natural resources. The quality of ARS research stems from our dedication to independent and objective research for the public good; this research cannot be duplicated in the private sector. This type of dedication was personified in J. Phil Campbell, Sr. – the man Congress honored in 1997 when it passed legislation renaming our Laboratory. Mr. Campbell was a dedicated public servant from this area whose contributions to agriculture, not only in the Southeast but also throughout the Nation, are well known and widely recognized. We thank you for linking this remarkable man to our lab and especially for the support Congress provides JPCNRCC to continue our important research programs.

Thank you again for this opportunity to testify. I would be happy to respond to any questions you might have.